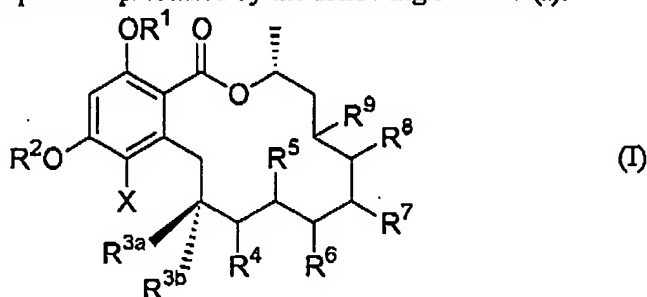


## CLAIMS

1. A dermal papilla cell growth promoter containing a compound having an activity of inhibiting the function of WNT-5A.

2. The dermal papilla cell growth promoter according to claim 1 wherein the compound inhibiting the function of WNT-5A is a WNT-5A production inhibitor.

3. A compound represented by the following formula (I):



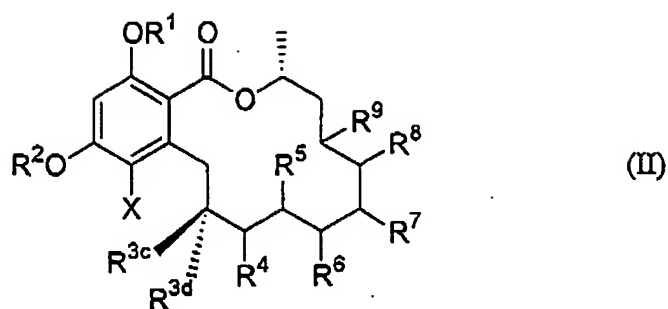
wherein  $R^1$  and  $R^2$  are the same or different and each represents a hydrogen atom, a  $C_{1-6}$  alkyl group or a  $C_{2-6}$  alkanoyl group;

X represents a hydrogen atom or a halogen atom;

$R^{3a}$  and  $R^{3b}$  are the same or different and each represents a hydrogen atom or a hydroxyl group; and

$R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  and  $R^9$  are the same or different and each represents a hydrogen atom, a hydroxyl group, a halogen atom or a  $C_{2-6}$  alkanoyloxy group, or adjacent groups thereof are taken together to form a  $\pi$  bond or an ether bond, or  $R^5$  and  $R^8$  or  $R^5$  and  $R^9$  are taken together to form an ether bond.

4. A dermal papilla cell growth promoter containing a compound represented by the following formula (II):

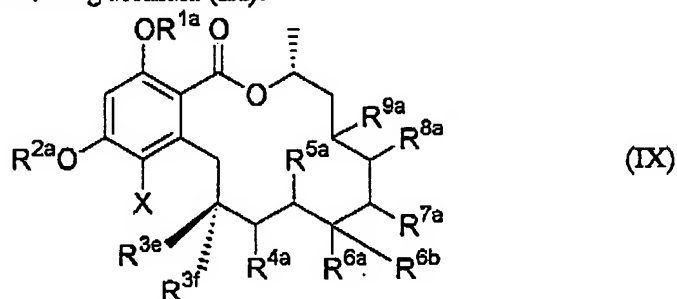


wherein  $R^1$  and  $R^2$  are the same or different and each represents a hydrogen atom, a  $C_{1-6}$  alkyl group or a  $C_{2-6}$  alkanoyl group; X represents a hydrogen atom or a halogen atom;

$R^{3c}$  and  $R^{3d}$  are the same or different and each represents a hydrogen atom, a hydroxyl group or a  $C_{1-6}$  alkoxy group, or  $R^{3c}$  and  $R^{3d}$  are taken together to form an oxo group, a hydroxyimino group or a  $C_{1-6}$  alkoxyimino group; and

$R^4$ ,  $R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$  and  $R^9$  are the same or different and each represents a hydrogen atom, a hydroxyl group, a halogen atom or a  $C_{2-6}$  alkanoyloxy group, or adjacent groups thereof are taken together to form a  $\pi$  bond or an ether bond, or  $R^5$  and  $R^8$  or  $R^5$  and  $R^9$  are taken together to form an ether bond.

5. A dermal papilla cell growth promoter containing a compound represented by the following formula (IX):



wherein  $R^{1a}$  and  $R^{2a}$  are the same or different and each represents a hydrogen atom, a  $C_{1-6}$  alkyl group, a  $C_{2-6}$  alkanoyl group,

a group represented by  $(\text{CH}_2)_p\text{CO-Y-R}^{10}$ , wherein Y represents an oxygen atom or a sulfur atom;  $\text{R}^{10}$  represents a hydrogen atom, a  $\text{C}_{1-6}$  alkyl group or a substituted or unsubstituted aryl group; and p is 0 or 1,

a group represented by  $(\text{CH}_2)_q\text{R}^{11}$ , wherein  $\text{R}^{11}$  represents a substituted or unsubstituted cycloalkyl group or a substituted or unsubstituted  $\text{C}_{2-10}$  heterocycle; and q is 0 or 1, or

a group represented by  $\text{COR}^{12}$ , wherein  $\text{R}^{12}$  represents a substituted or unsubstituted aryl group or a substituted or unsubstituted  $\text{C}_{2-10}$  heterocycle;

X represents a hydrogen atom or a halogen atom;

$\text{R}^{3c}$  and  $\text{R}^{3f}$  are the same or different and each represents a hydrogen atom, a hydroxyl group, a  $\text{C}_{1-6}$  alkoxy group or a  $\text{C}_{1-6}$  alkanoyloxy group, or  $\text{R}^{3c}$  and  $\text{R}^{3f}$  are taken together to form an oxo group, a hydroxyimino group or a  $\text{C}_{1-6}$  alkoxyimino group; and

$\text{R}^{4a}$ ,  $\text{R}^{5a}$ ,  $\text{R}^{6a}$ ,  $\text{R}^{7a}$ ,  $\text{R}^{8a}$  and  $\text{R}^{9a}$  are the same or different and each represents a hydrogen atom, a hydroxyl group, a halogen atom or

a group represented by  $\text{Z-R}^{13}$ , wherein Z represents an oxygen atom or a sulfur atom; and  $\text{R}^{13}$  represents a  $\text{C}_{1-6}$  alkyl group, a  $\text{C}_{1-6}$  alkanoyl group or a substituted or unsubstituted aryl group, or

adjacent groups thereof are taken together to form a  $\pi$  bond or an ether bond, or

$\text{R}^{5a}$  and  $\text{R}^{8a}$  or  $\text{R}^{5a}$  and  $\text{R}^{9a}$  are taken together to form an ether bond; and

$\text{R}^{6b}$  represents a hydrogen atom, or is taken together with  $\text{R}^{3c}$  and  $\text{R}^{3f}$  to form an ether bond.

6. A hair growth stimulant or a hair growth tonic which comprises the dermal papilla cell growth promoter according to any one of claims 1, 2, 4 and 5 as an active ingredient.

7. A method of stimulating hair growth or promoting hair growth, which comprises administering a pharmaceutically effective amount of a compound having an activity of inhibiting the function of WNT-5A to human.

8. Use of a compound having an activity of inhibiting the function of WNT-5A in producing a hair growth stimulant or a hair growth tonic.

9. A method of screening a dermal papilla cell growth promoter, which comprises selecting a compound inhibiting the function of WNT-5A.

10. The method according to claim 9, which comprises the following steps (a) to (c):

(a) a step of culturing human WNT-5A-expressing cells in a medium to which a compound has been added;

(b) a step of lysing the human WNT-5A-expressing cells cultured in the step (a) to extract RNA, and determining the WNT-5A mRNA amount; and

(c) a step of comparing the WNT-5A mRNA amount determined in the step (b).